the general public, as it is possible there are differences in the valuation of states close to death.

PCN149
HEALTH STATE UTILITY VALUES IN BREAST CANCER: A REVIEW AND META-ANALYSIS
Peasgood T[1], Ward SE[2], Brazier J[1]
[1]University of Sheffield, Sheffield, UK, [2]Univerrsity of Sheffield, Sheffield, UK
OBJECTIVES: Health-related quality of life is an important issue in the treatment of breast cancer (BC) and health-state utility values (HSUVs) are essential for cost-utility analysis. The aim of the study was to identify published values for common health states for breast cancer and to determine pooled estimates of HSUVs for each identifiable health state. **METHODS:** A systematic review of HSUVs for conditions relating to BC was undertaken. Thirteen databases were searched in March 2009. HSUVs were allocated to six categories: screening related states, preventative states, adverse events in breast cancer and its treatment, non-specific breast cancer, early breast cancer (EBC) states and metastatic breast cancer (MBC) states. Where appropriate meta analysis was used to provide utilities based on combining all available evidence. Mean utility estimates were pooled using ordinary least squares with utilities clustered within study group and weighted by both number of respondents and inverse of the variance of each utility. Regressions included controls for disease state, utility assessment method and other features of study design. **RESULTS:** Forty-nine articles were identified, providing 476 unique utility values. From these, 117 values for MBC and 230 values for EBC were extracted and analysed by regression analysis. Utilities were found to vary significantly by valuation method (e.g. in EBC standard gamble had higher valuations than TTO and EQ-5D), and source of values. For MBC values significantly varied in expected direction by severity of condition, treatment and side-effects. **CONCLUSIONS:** Despite the numerous studies it was not feasible to generate a definitive list of HSUVs that could be used in future economic evaluations, due to the complexity of the health states involved and the variety of methods used to obtain values. Future research into quality of life in BC should make greater use of validated generic preference-based measures for which public preferences exist.

PCN150
WILLINGNESS TO PAY FOR A REDUCTION IN RISK OF TREATMENT SIDE EFFECTS IN PATIENTS WITH METASTATIC BREAST CANCER
Lalla D[1], Mclaughlin T[2], Brammer M[1], Bramley T[2], Bare A[2], Carlton R[2]
[1]Genentech Inc., S San Francisco, CA, USA, [2]Xcenda, LLC., Palm Harbor, FL, USA
OBJECTIVES: The objective of this analysis was to assess patients' willingness to pay (WTP) for a reduction in risk of breast cancer treatment side effects. **METHODS:** A survey was developed using continent valuation processes to assess the WTP for a reduction in side effects. The survey asked female MBC patients to provide the amount they were willing to pay for a 25%, 50% and 100% reduction in risk of the following side effects: diarrhea/dehydration, hair loss, fatigue, nausea, neutropenia/febrile neutropenia, pain and tingling in hands and feet. Patients were also asked to select the side effect they would pay the most to avoid. Demographic information such as age, race/ethnicity, region, employment status, insurance type, and treatment regimen was also collected. **RESULTS:** A total of 202 metastatic breast cancer patients completed the survey. The majority of respondents were white, married, over the age of 51, and well educated. Most respondents had private insurance (67%) or Medicare (24%). Of those who reported paying out of pocket for their last treatment (58%), the average payment was $459. For a 25%, 50%, and 100% reduction in the risk of side effects, respondents were willing to pay an extra $1886, $3837 and $7794, respectively. Hair loss (28%), pain (17%) and nausea (15%) were selected most often as the side effect respondents would pay the most to avoid. **CONCLUSIONS:** Patients with MBC highly value reduction in treatment side effects and are WTP 4.2 times more for a treatment devoid of side effects over a treatment with a 25% reduction in the risk of side effects. Additional research is warranted to quantify WTP for specific side effects.

Cancer – Health Care Use & Policy Studies

PCN151
VALUE OF OUTCOMES RESEARCH TO INFORM REIMBURSMENT DECISION-MAKING ILLUSTRATED BY AN OBSERVATIONAL STUDY IN CHRONIC LYMPHOCYTIC LEUKEMIA
Holtzer-goor K[1], Bouwmans C[1], Schaafsma MR[2], Uyl-de Groot CA[1]
[1]Erasmus University Rotterdam, Rotterdam, The Netherlands, [2]Medisch Spectrum Twente, Enschede, Overijssel, The Netherlands
OBJECTIVES: As outcomes research is being used to inform the decision-maker about continuation of reimbursement of expensive hospital drugs in the The Netherlands since 2006, this type of research is becoming more important. Our study started before 2006 and aimed to evaluate therapies in daily clinical practice and their costs and outcomes. This study gives an indication of the challenges that may arise from the design of outcomes research. **METHODS:** An observational follow-up study was performed including 160 patients with chronic lymphocytic leukemia (CLL). Data collection on treatment, costs and outcome was performed in 19 Dutch hospitals using medical records. **RESULTS:** Patients diagnosed between 1999 and 2003 were included and followed during 6.4 years on average. The mean age was 63 years (range: 30-86). 20% received one therapy-line, 12% two and 24% received three or more therapy-lines. Most patients received chlorambucil (87%) as first therapy and the second line was dominated by fludarabine (46%). However, therapies from the third line onwards varied extensively. Due to the development of new medicines like monoclonal antibodies, the treatment sequence changed in the more recently diagnosed patients. As a consequence of the relatively low incidence of CLL and the variety in therapy, the number of patients with comparable therapies was small. **CONCLUSIONS:** Management of CLL varied strongly especially after the second therapy-line. This may be caused by the introduction of monoclonal antibodies as first and second line treatment during the study period. Additionally, a comparison of alternative therapies was hampered due to relative small number of patients. Consequently, modeling studies or patient registrations might be necessary to obtain valid information about cost-effectiveness of new expensive inpatient medicines in (chronic) diseases with a low incidence rate and a highly variable or changing management strategy.

PCN152
CAN BREAST CANCER RISK PREDICTION REDUCE THE RISKS OF FALSE NEGATIVE AND FALSE POSITIVE SCREENING MAMMOGRAMS?
Armstrong K, Handorf E, Chen J, Bristol-Demeter M
Perelman School of Medicine at the University of Pennsylvania, Philadelphia , PA, USA
OBJECTIVES: Controversy continues about screening mammography, partially because of risks involved. Pre-test breast cancer risk prediction may improve positive and negative predictive value of screening mammography, particularly among women who have an abnormal screening mammogram. **METHODS:** We modeled one-year breast cancer risk in women with abnormal screening mammograms (BI-RADS3, BI-RADS4) by combining estimates of pre-test breast cancer risk based upon established risk factors, 12 validated SNPs and the average probability of cancer given BI-RADS category. We examined the degree to which the incorporation of pre-test breast cancer risk would reclassify women from current recommendations for short-term follow up of BI-RADS3 and biopsy of BI-RADS4 using biopsy thresholds of 1, 2 and 3% probability of breast cancer. **RESULTS:** Women with BI-RADS3 in the lowest 5% of pre-test breast cancer risk had a one-year average breast cancer risk of 0.24% compared to 2.7% for women in the highest 5% of pre-test risk. Women with BI-RADS4 in the lowest 5% of pre-test risk had a one-year average breast cancer risk of 4.9% compared to 39.8% for women in the highest 5% of pre-test risk. Incorporating BI-RADS 4 subclassifications increased the risk discrimination, women with BI-RADS 4A in the lowest 5% of pre-test probability had a one-year breast cancer risk of 1.4%. Using a biopsy risk threshold of 2%, 8% of women with a BI-RADS3 had a post-test risk above the threshold for biopsy and 7% of women with BI-RADS4A had a post-test risk below the threshold. **CONCLUSIONS:** Although incorporation of pre-test risk estimates changes decisions about management of abnormal mammograms for a relatively small proportion of women, the public health impact could be significant given the incidence of abnormal mammograms. Prospective studies are needed to determine effectiveness of breast cancer risk prediction in improving the positive and negative predictive value of mammography screening.

PCN153
COST OF HOSPITAL CARE IN POPULATION OF PATIENTS WITH NEOPLASMS IN POLAND
Macioch T[1], Paweska J[2], Niewada M[2], Hermanowski TR[1]
[1]Medical University of Warsaw, Warsaw, Poland, [2]HealthQuest Sp.z o.o., Warsaw, Poland
OBJECTIVES: Although cancer morbidity is lower than cardiovascular or metabolic diseases, it is still the second leading cause of mortality and also the major economic problem due to high cost of treatment. According to estimations by the Karolinska Institutet and Stockholm School of Economics, the direct costs of caring for cancer patients are approximately 6.5% of total healthcare costs. The aim of this study was to estimate cost of hospital care in population of patients with neoplasms in 2009. **METHODS:** We used National Health Fund (NHF) statistics on Diagnosis-Related Groups (DRGs) attrition in 2009 year. Precise, in respect to ICD-10 diagnosis, NHF statistics cover 85% of all data. We identified data only for malignant neoplasms (C00-C97), in situ neoplasms (D00-D09) and neoplasms of uncertain or unknown behavior (D37-D48). Values are presented in Euro (exchange rate: 1 EUR=4.00 PLN). **RESULTS:** Cost of hospital care in population of patients with neoplasms was estimated to amount of 246.3 million EUR (289.7 million EUR when correction for 85% statistics cover will be applied). The highest costs of hospital care were related to malignant neoplasm of bronchus and lung (34.3 million EUR) followed by malignant neoplasm of bladder (26.5 million EUR), and malignant neoplasm of colon (22.8 million EUR). Given the number of cancer patients in Poland which is estimated to be 270 thousands, cost of hospital care per cancer patient per year would be approximately 1073 EUR. However apart from DRGs, cost of hospital care in population of patients with neoplasms includes also separately contracted chemotherapy (374.3 million EUR) and some Therapeutics Programs with a new drugs such as trastuzumab in breast cancer (46.1 million EUR) . **CONCLUSIONS:** Cost of hospital care in population of cancer patients is substantial and account for over 11.5% of all costs of hospital care in Poland in 2009.

PCN154
DISCUSSING THE INTRODUCTION OF NATIONAL SCREENING PROGRAMS IN GREECE: A DELPHI STUDY
Skroumpelos A, Pavi E, Kyriopoulos J
National School of Public Health, Athens, Greece
OBJECTIVES: In the absence of national screening programs (NSP) for adults in Greece, the aim of this study was to examine experts' views and recommendations on a predefined set of NSPs **METHODS:** A systematic review was conducted to identify those screening programs that best meet the criteria of clinical effectiveness and cost efficiency. The programs identified were set for evaluation in a multi-professional expert panel which completed a structured questionnaire in three rounds, using the Delphi method. Experts' agreement was investigated as well as

their recommendations for the implementation, the target-group, the rescreening interval and the primary screening methods of the programs proposed, and to recommend the social insurance reimbursement level. **RESULTS:** Of the 33 experts invited, 26 (78%) accepted to participate. The vast majority of them supported the implementation of an NSP for breast cancer, cervical cancer, colorectal cancer, vascular risk and abdominal aortic aneurysm. Both the rescreening interval and the primary screening method of each of the programs were considered adequately effective. The biggest debate was focused on the target-group of the colorectal cancer and the abdominal aortic aneurysm program. All of the experts argued that social insurance should fully reimburse the programs for the individuals that fulfill the eligibility criteria. Otherwise the cost should be borne by the individual, according to the 77% of the panelists. 68% of the experts argued that when the eligibility criteria are not fullfiled but the individual is referred by a general practitioner or a specialist for screening, social insurance should partly reimburse the cost. **CONCLUSIONS:** Despite any debates especially on the target-group of the programs, all of the programs were deemed necessary, stressing the need for organized screening in order to reduce mortality and morbidity from certain conditions and to optimize the allocation of resources invested in secondary prevention

PCN155

THE CHALLENGES OF ESTIMATING COSTS OF PALLIATIVE CARE: A SYSTEMATIC LITERATURE REVIEW

Hendry L[1], Tumur I[2], Farquharson R[3], Kroes MA[3]
[1]*Pfizer Ltd, Tadworth, Surrey, UK,* [2]*Pfizer Ltd, Tadworth, Surrey , UK,* [3]*Abacus International, Bicester, Oxfordshire, UK*

OBJECTIVES: To systematically review the literature for methods of estimating the costs of palliative care and to assess which costs are included in palliative care. **METHODS:** Preliminary scoping of health technology assessment appraisals identified high degree of heterogeneity in how palliative care is defined, in terms of the type of care, and the models and settings of delivery. To focus the review, patients with metastatic renal cell carcinoma (mRCC) were chosen as the reference population, in keeping with the PICO (population, indication, comparison, outcome) approach to formulating research questions. Relevant search terms were identified and searches conducted in EMBASE, MEDLINE, Cochrane library and Econlit. Results were filtered using pre-specified selection criteria and data extracted into a pre-defined template. **RESULTS:** Without a specified patient population, database searches identified almost 17,000 records; mRCC focussed searches identified 1,172 records. From mRCC searches 66 full text publications were assessed and only 17 met pre-defined inclusion criteria. Of these publications, nine assessed surgery costs; five were cost-effectiveness assessments; and three assessed burden of disease. Cost data collected was largely based on expert opinion and country-specific assumptions (with potential bias) making generalisation difficult. Notable levels of heterogeneity between the included publications (publication type, year, country and perspective) precluded consistent, qualitative synthesis of the data. **CONCLUSIONS:** Despite focussing on a specific disease population, high levels of heterogeneity in the reporting and study of palliative care, in terms of setting and delivery, prevented a robust interpretation of the data. A key driver of this heterogeneity may be the fact that palliative care is delivered in a variety of settings, using diverse models of care. Evidence-based assessments of costs of palliative care present methodological challenges. Therefore, we see a need for agreement on the definitions and parameters of palliative care, which would greatly assist future decision making.

PCN156

A SURVEY EXAMINING TREATMENT PATTERNS OF MELANOMA IN AUSTRALIA

Adams J[1], Cuyun Carter G[2], Strizek A[3], Rajan N[3]
[1]*Pretium, Sydney, NSW, Australia,* [2]*Eli Lilly and Company, Indianapolis, IN, USA,* [3]*Eli Lilly Australia, West Ryde, NSW, Australia*

OBJECTIVES: Australia has the highest incidence of melanoma in the world, however little published information exists regarding treatment patterns. A study was undertaken to define current treatment options offered to Australian patients. **METHODS:** A survey was developed from interviews with 7 scientific experts treating melanoma in Australia. Algorithms outlining referral and treatment patterns across all stages of melanoma were derived and validated by dermatologists and general surgeons for early stage and medical oncologists for later stage disease. **RESULTS:** A total of 115 oncologists were identified as treating melanoma in Australia and 26% of those responded. In addition, a sample of 40 dermatologists and surgeons were contacted and 43% of those participated. Results demonstrated that nearly all patients with local or locoregional melanomas undergo radical excision of their primary lesion; whereas 73.1% of patients with metastatic melanoma have their primary lesion excised. For metastatic disease, the majority of oncologists reported that current 1st line chemotherapy is dacarbazine (DTIC) (85%) or fotemustine (77%), although a large percentage also reported enrolling patients in clinical trials (73%). Nine oncologists (36%) surveyed indicated that they expect overall survival (OS) of 7-9 months after initiation of 1st line chemotherapy. Oncologists also reported that 48% of patients who relapse after 1st line therapy receive 2nd line therapy, of which enrollment into a clinical trial (69%) or treatment with fotemustine (62%) are the most common treatment options. Approximately half (48%) of oncologists surveyed expect OS in 2nd line to be 3-6 months. The most common sites for development of metastases were reported to be lung (48.0%), liver (47.6%) and brain (38.0%). **CONCLUSIONS:** To our knowledge, this is the first survey conducted to understand melanoma treatment patterns in Australia. This study provides information for evidence-based decision makers to understand how health resources are utilised in the treatment of melanoma in Australia.

PCN157

THE IMPACT OF A PATIENT SUPPORT PROGRAM ON ACCESS TO ORAL ONCOLOGY THERAPY IN THE UNITED STATES

Pashos CL[1], Cragin LS[2], Khan ZM[3]
[1]*United BioSource Corporation, Lexington, MA, USA,* [2]*United BioSource Corporation, Bethesda, MD, USA,* [3]*Celgene Corporation, Summit, NJ, USA*

OBJECTIVES: Access to innovative medicines is sometimes challenging due to issues related to affordability, attributable at least in part to the heterogeneity and design of health insurance coverage. A support program (Program) to help patients requesting assistance in accessing oral oncology agents was evaluated to determine if it facilitated their access to medication. **METHODS:** Anonymized data from a random sample of patients enrolling in the Program in 2008-2009 and a random sample of control patients from Risk Evaluation and Mitigation Strategies (REMS) programs for lenalidomide and thalidomide were analyzed. Specifically, patient characteristics, type of assistance provided, and dispensing outcomes (proportion successfully dispensed medication, time from prescription authorization to first dispense, reason for non-dispense, and proportion of Program patients seeking further assistance following their initial request) were assessed. **RESULTS:** A random sample of 1000 Program and 1000 control patients was evaluated. Most patients had a primary diagnosis of multiple myeloma or of myelosdysplastic syndromes. Despite the expressed need for assistance in accessing medication among the Program patients, the percentage of Program patients receiving medication compared with patients in the control group was not statistically different (89% vs. 91%, respectively; $p = 0.270$), with a difference in median time to dispense of 3 days. Ninety-two percent of Program patients successfully obtained durable access to oral medication. **CONCLUSIONS:** The results suggest that a support program for patients needing assistance in a complex health insurance environment can effectively achieve a goal of helping them to obtain access to therapies prescribed by their physicians. Research should be conducted to better understand which elements of such programs are most valuable to patients, and therefore would be considered best practices for such programs.

PCN158

THE INFLUENCE OF HEALTH CARE POLICIES AND HEALTH CARE SYSTEM DISTRUST ON WILLINGNESS TO UNDERGO GENETIC TESTING

Armstrong K[1], Putt M[2], Hughes halbert C[1], Grande D[2], Shwartz JS[3], Liao K[2], Marcus N[1], Bristol-demeter M[1]
[1]*Perelman School of Medicine at the University of Pennsylvania, Philadelphia , PA, USA,* [2]*Perelman School of Medicine at the University of Pennsylvania, Philadelphia, PA, USA,* [3]*Perleman School of Medicine at the University of Pennsylvania, Philadelphia , PA, USA*

OBJECTIVES: As the potential role of genetic testing in disease prevention and management grows, so does concern about differences in uptake of genetic testing across social and racial groups. Characteristics of how genetic tests are delivered may influence willingness to undergo testing and potentially alter disparities in testing. **METHODS:** Conjoint analysis study of the effect of three characteristics of genetic test delivery on willingness to undergo genetic testing for cancer risk. Data were collected using a random digit dialing survey of 337 individuals living in the US. Measures included conjoint scenarios, health care system distrust (values and competence subscales), health insurance coverage, and sociodemographic characteristics. Three attributes were studied: disclosure of test results to the health insurer, provision of the test by a specialist or primary care doctor, race specific or race neutral marketing. **RESULTS:** In adjusted analyses, disclosure of test results to insurers, having to get the test from a specialist, and race specific marketing were all inversely associated with willingness to undergo the genetic test, with the greatest effect for the disclosure attribute. Racial differences in willingness were not statistically significant ($p=0.07$) and the effect of the attributes on willingness to undergo testing did not vary by patient race. However, the decrease in willingness with insurance disclosure was greater among individuals with high values distrust ($p=0.03$) and the decrease in willingness to undergo testing from specialist access was smaller among individuals with high competence distrust ($p=0.03$). **CONCLUSIONS:** Several potentially modifiable characteristics of how genetic tests are delivered are associated with willingness to undergo testing. The effect of two of these vary according to the level of health care system distrust, suggesting that policy decisions about delivery of genetic testing may influence differences in uptake across patient subgroups defined by levels of distrust rather than by race.

PCN159

DIAGNOSTICS AND TREATMENT OF PATIENTS WITH NON-SMALL-CELL LUNG CANCER IN DAILY PRACTICE

Blommestein H[1], Groen H[2], Smit E[3], Thunnissen E[3], Uyl-de Groot C[1]
[1]*Erasmus University, Rotterdam, The Netherlands,* [2]*University Medical Center Groningen, Groningen, Groningen, The Netherlands,* [3]*VU University Medical Center, Amsterdam, Noord-Holland, The Netherlands*

OBJECTIVES: Lung cancer is the most common cause of cancer mortality in Europe. Gefitinib and erlotinib are two epidermal growth factor receptor (EGFR) tyrosine kinase inhibitors (TKIs) registered for patients with non–small-cell lung cancer (NSCLC). Patients with a positive EGFR-mutation benefit from first line treatment with EGFR-TKIs. However, since worse outcomes are observed among patients without the mutation, testing is crucial. Our study aims to investigate the use of diagnostics and treatment with EGFR-TKI of patients with NSCLC in daily practice. **METHODS:** We sent a semi-structured questionnaire to physicians and laboratories about EGFR-mutation tests and treatment strategies. Furthermore, sales numbers of gefitinib and erlotinib were obtained to calculate the number of patients treated with EGFR-TKI. **RESULTS:** Response covered more than two third of the Dutch lung cancer population. Approximately 70% of the patients, which should have been tested for EGFR-mutation, were tested. Sub-analyses revealed large re-